REMARKS

The present invention is directed to a process for converting wax primarily C_{24}-C_{100} hydrocarbons, with essentially no sulfur or nitrogen content, into an isoparaffinic lube base stock, the process comprising

first passing the wax with a hydrogen cofeed over a unidimensional molecular sieve catalyst comprising a unidimensional intermediate pore molecular sieve with near circular pore structure having an average diameter of 0.50 nm to 0.65 nm wherein the difference between a maximum diameter and a minimum diameter is $\leq$ 0.05 nm and one or more Group VIII metals, to form an intermediate product; and

second, passing the intermediate product over a Beta catalyst comprising a Zeolite Beta and one or more Group VIII metals, to form the isoparaffinic lube base stock.

The Examiner rejects claims 1-7, 12 and 13 under 35 U.S.C. § 103(a) as obvious over Yen (USP 4,767,522) in view of Apelian et al (USP 5,976,351).

Yen teaches a process wherein waxy distillate feedstocks are dewaxed by passing the feedstock over a combination catalyst comprising a mixture of a medium pore zeolite and a large pore zeolite having hydroisomerization activity. The medium pore zeolite can be ZSM-5, ZSM-11, ZSM-12, ZSM-23, ZSM-38, ZSM-35, ZSM-48, TMA, offretite, while the large pore zeolite with which it is intentionally mixed can be Zeolite Beta, ZSM-4, ZSM-20, Mordenite, TEA Mordenite, Dealuminized Y and Rare Earth Y. Preferably, the large pore zeolite is Zeolite B.

The composite catalyst comprises 5 to 60 wt% medium pore zeolite, 5 to 60 wt% large pore zeolite, 0 to 50 wt% binder and 0.1 to 5 wt% finely dispersed metal selected from Group VI, VII and VIII.

Nothing in Yen teaches a process for producing a high quality isoparaffinic lubricating oil by hydroisomerizing a wax containing primarily C_{24}-C_{100} hydrocarbons by first contacting the wax with a unidimensional intermediate pore molecular sieve containing

BEST AVAILABLE COPY

one or more Group VIII metals and then contacting the intermediate product so produced with a Zeolite Beta catalyst containing one or more Group VIII metals.

Teaching the use of a composite catalyst in no way constitutes a teaching or a suggestion that two catalysts be used independently and in sequence nor what sequence to use.

Apelian teaches the production of high viscosity index lubricants by isomerizing petroleum wax over a boron free zeolite of high SiO_2/Al_2O_3 ratio. The petroleum wax may be hydrocracked prior to isomerization. The isomerized product may be dewaxed, the dewaxing taking the form of either solvent dewaxing or catalytic dewaxing. The zeolite used for the isomerization step is a non-borated zeolite and can be Zeolite Beta containing a Group VIII metal. The dewaxing of the isomerate can be catalytic dewaxing using an intermediate pore size zeolite having a constraint index in the range 1 to 12, including natural ferrierite as well as synthetic ZSM-22, ZSM-23, ZSM-35, further containing a hydrogenation component.

As is clear, Apelian practices a process which uses, e.g., boron free Zeolite Beta first followed by cat dewaxing which can employ an intermediate pore zeolite.

This does not teach, suggest or imply that the order of the use of the different catalysts can or should be reversed nor that if the order is reversed a viable product would still be secure.

Nothing in Apelian would lead one to expect that a high quality lube oil can be obtained by practicing a process wherein wax is first hydroisomerized using an intermediate pore zeolite such as PT/ZSM-48, to produce an intermediate product which is then separately and independently further catalytically treated using a Group VIII metal loaded Zeolite B.

If anything, Apelean would lead away from reversing the order of the catalysts.

In Apelian the first catalyst used, the Zeolite B type, is used because it is large pore and has shown outstanding activity for paraffin isomerization in the presence of aromatics

BEST AVAILABLE COPY

(column 10, lines 28-32). The dewaxing catalyst is used second because it is selective to n-paraffins and the waxy slightly branched chain paraffins while leaving the mono branched chain isoparaffins in the process stream (column 12, lines 62-65). Shape selective catalytic dewaxing processes employ catalysts which are more highly selective for removal of n-paraffins and slightly branched chain paraffins than is the isomerization catalyst Zeolite Beta (column 12, line 65 - column 13, line 2).

Thus, with this before him one skilled in the art would have no motivation to reverse the order in which the catalysts are employed, there being no basis for any expectation that such a reversal would or could still lead to the production of high quality isoparaffin lube oil in high yield.

The Examiner rejects claims 8-11 under 35 U.S.C. § 102(b) as anticipated by USP 6,090,989.

Claims 8-11 have been cancelled.

It is requested that the Examiner reconsider this application in light of the arguments presented above that he withdraw the rejection, allow the claims and pass the case to issue in due course.

Respectfully submitted,

Joseph J. Allocca

Joseph J. Allocca
Attorney for Applicants
Registration No. 27,766
Telephone Number: (908) 730-3629
Facsimile Number: (908) 730-3649

[X] Pursuant to 37 CFR 1.34(a)

ExxonMobil Research and Engineering Company
P. O. Box 900
Annandale, New Jersey 08801-0900

JJA:kak
8/3/2006

BEST AVAILABLE COPY